DOCUMENT RESUME

ED 258 623 JC 850 332

AUTHOR Crowder, Daniel B.
TITLE The Importance of the Humanities in the Age of High Technology.
PUB DATE 21 Oct 83
NOTE 16p.; Paper presented at a Meeting of the Mid-South Association of Community and Junior Colleges (Dyersburg, TN, October 21, 1983).
PUB TYPE Speeches/Conference Papers (150) -- Viewpoints (120)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *College Curriculum; Community Colleges; *Educational Needs; Humanistic Education; *Humanities; *Technological Advancement; Two Year Colleges

ABSTRACT

During the half a million years that man has been on earth, three fundamental technological revolutions have taken place: the agrarian revolution, the industrial revolution, and the era of high technology. In contrast to the first two revolutions, the high tech revolution has taken place at a much more rapid rate, causing pressures that have many people reeling in confusion while trying desperately to determine intelligent ways to adapt. This revolution has tremendous implications for American community colleges, especially as it applies to preparing workers for changes in their old positions and for emerging occupations. There is a tendency for some schooled in the humanities to view the whole mechanical world as an unwelcome intrusion on the world of higher thought and to resist changes to the traditional college curriculum. By contrast, those trained in the sciences and technologies urge radical alteration of the curriculum to prepare people for the myriad of new technical occupations they see emerging on the scene. What is called for is a rational analysis of the emerging high technology era and its implications for program and course content in community college curricula. A review of research on the jobs and skill requirements of the future indicates that: (1) no more than 5% to 7% of the new job openings will be in high technology, with most new employment opportunities requiring little technological knowledge; (2) the average worker of the future will change careers or require job retraining several times during his/her working years; and (3) employers express preference for their employees to possess the intellectual skills of the liberal arts rather than specific job skills. In summary, the liberal arts, and especially the humanities, are the heart and core of a college education and should be an integral part of every technical program. (AYC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
D. B. CROWDER

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☐ This document has been reproduced as received from the person or organization originating it.
☒ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

ED258623

IC 850 332

KEYNOTE ADDRESS TO THE
MID-SOUTH ASSOCIATION OF COMMUNITY AND JUNIOR COLLEGES

9:15 a.m., October 21, 1983
Dyersburg State Community College
Dyersburg, Tennessee

THE IMPORTANCE OF THE HUMANITIES IN THE AGE OF HIGH TECHNOLOGY

Daniel B. Crowder
President
West Virginia Northern Community College
Wheeling, West Virginia 26003

THE IMPORTANCE OF THE HUMANITIES
IN THE AGE OF HIGH TECHNOLOGY

I. High Technology: A Historic Perspective

Man has been on this earth for at least half a million years during which time he has experienced three fundamental technological revolutions--each of which has had severe social and economic implications dramatically affecting his way of life.

The first of these was the agrarian revolution which took place about 8,000-10,000 B.C. and was characterized by the domestication of plants and animals and the use of metals to make tools. This revolution marked man's change from a herding, food-gathering, nomadic tribesman to a relatively sedentary cultivator of the soil. Agriculture was the primary source of wealth, though commerce and banking, villages, then cities and city-states emerged from this new socio-economic system. This system prevailed in the Western World well into the 18th century and remains dominant in the Third World nations yet today.

The second major technological revolution is known in history as the Industrial Revolution and took place in Western Europe during the

18th and early 19th centuries. Its genesis in the United States dates from the early 1840s, though its major impact was not felt until the years following the Civil War. The Industrial Revolution was characterized by the application of new forms of energy to mining and manufacturing and the invention of new power-driven machines. During this period, millions of people left their native villages and farms to work and live in the mushrooming industrial/urban centers.

The third technological revolution--the Era of High Technology--began in the industrialized nations about the middle of the 1960s and has gained increased momentum during the past twelve to fifteen years. This revolution is characterized by the use of machines to control other machines and was made possible by new dramatic breakthroughs in technical and scientific knowledge. It is symbolized by the robot, the silicon chip, biogenics, and the micro-computer, and has had a dramatic impact on the way we live and earn a living. Its major application is in communications, or the gathering, organizing, and processing of information, though its presence is felt in nearly all phases of social and economic activity, including agriculture, mining, manufacturing, and education.

The first two technological revolutions took place over relatively long periods of time, and, though they were disruptive and resulted in

widespread dislocation, each gave man sufficient time to adjust. The high tech revolution, by contrast, has taken place at a much more rapid rate. Most Americans living today grew up in the Industrial Era, and many have roots in the agrarian past. The pressures of this new dramatic change in technology have many people reeling in confusion while trying desperately to determine intelligent ways to adapt. The problem is how.

II. Coping with the High Tech Era: Challenge and Response

After exhaustive study of the rise and fall of civilizations, the late British historian Arnold Toynbee concluded that all nations are faced with challenges periodically, and that those nations that comprehend the nature of the challenges and find ways to respond creatively continue to survive and flourish. Those that do not are overwhelmed and disappear. Today Americans are faced with a revolutionary new technology, which is dislocating thousands of American workers, especially in the older smokestack industries of automobiles and steel. Many of these people will never return to their old positions, and those who do will need to learn to operate robots and other highly sophisticated machines. It was relatively simple for a

herdsman to learn to be a farmer, or for a farmer to learn how to operate the early industrial machines. However, the current technological revolution poses a far greater challenge to man's ability to adapt. Though clearly we must come to terms with the new reality and respond as well as we can. And, community colleges share a major responsibility for preparing workers for available jobs. However, the way we respond has tremendous implications for the American educational system, especially as it applies to preparing workers for changes in their old positions and for employment in the newly emerging occupations. This is particularly important to those of us in community colleges, though we are far from certain as to how we can deal with the problem most effectively.

There is a tendency for some schooled in the humanities to view the whole mechanical world as an unwelcome intrusion on the world of higher thought and to wish that it would simply go away. Humanists are, at heart, agrarians and have never really come to terms with the industrial revolution. As pointed out in a recent article in The Chronicle of Higher Education, "Liberal-arts education has often been associated with a subtle, and sometimes not-so-subtle, bias against urbanization, mass production, and the machine."[1] Individuals trained in the humanities tend to feel

that the purpose of an education is the cultivation of the intellect and the contemplation of lofty ideals; and that, therefore, the traditional college curriculum should remain basically unchanged. By contrast, our colleagues trained in the sciences and technologies view the emerging high tech era as the prevailing "wave of the future" and urge us to radically alter the curriculum to prepare people for the myriad of new technical occupations they see emerging on the scene. Others--perhaps most in the present setting--see technical vs. liberal education as a false dichotomy, and insist on a blending of the two. Wisdom would seem to suggest, therefore, a rational analysis of the current situation, and realistic planning for the years ahead.

In any event, the high tech era <u>is</u> a reality, and we must address the questions its emergence has thrust upon the scene. We must be prepared to review, and if necessary to revise, our curricula to better prepare our students for the new positions, and for old positions requiring new skills. However, the truth of the matter is that it is somewhat unclear exactly what new technical jobs will be available during the next ten to twenty years. It has indeed been suggested that from 60 to 70

percent of the job titles of the occupations of the year 2,000 will be entirely new.[2] Even if this question were settled, we would still need to decide what skills would best enable a worker to succeed in the new positions of employment in which he is likely to be engaged.

Given these conditions, we would perhaps do well to remember Aristotle's admonition that the best position usually lies somewhere between the two extremes--at a place on the imaginary continuum Aristotle called the "Golden Mean." Emerson cautioned in "The American Scholar" that one should "not quit his belief that a popgun is a popgun, though the ancient and honorable of the earth affirm it to be the crack of doom." While the new technological revolution is certainly more than a popgun, it need not be viewed as the crack of doom.

However, the new reality of the high tech era would seem to require a re-examination of the college curriculum, especially two-year technical programs. When we do this I trust we opt to retain the time-honored core of general education since it has proven its usefulness for generations. In any case, on the basis of knowledge currently available, we would be well advised to avoid the two extremes. Neither a reactionary,

ostrich-like resistance nor a frantic, avant-garde plunge into radical curricular revision would seem to be a wise and sound response. Rather, what is called for is a rational analysis of the emerging high tech era, and especially of its implications for program and course content in our community college curricula designed to prepare our students for the world of work. Much research has already been done in this area, and we would do well to review what has been discovered regarding what jobs are likely to be available and what skills those who have studied the question find likely to be most helpful in enabling our graduates to succeed.

In the first place, the U.S. Bureau of Labor statistics estimates that no more than from five-to-seven percent of the new job openings will be in high technology. What is more, many of these positions will be filled by scientists and engineers who will require higher levels of training than a community college degree. Indeed, according to Department of Labor projections, most new employment opportunities will be in low- to mid-technology areas, and in such services jobs as secretaries, nurses aides and orderlies, janitors and sextons, sales clerks, cashiers, professional nurses, truck drivers, food service workers for fast food restaurants,

and general office clerks. John Naisbitt, in his recent book, Megatrends, estimates that computer skills will be needed in up to 75 percent of all jobs by 1990. However, most of these positions identified by the Department of Labor would seem to require little knowledge in high technology other than the possible familiarity with computers or word-processing machines. Congressman Robert Garcia (D-NY), speaking in support of a tax bill recently, explained: "Contrary to popular belief, most jobs of the future will not be in the 'high tech' fields but in service occupations."[3] Regardless of our wishes in the matter, this appears to be the reality.

In the second place, it is suggested by much recent research (e.g., The Boundless Resource by Willard Wirtz) that the average worker of the future will change careers several times during his working years and that those who remain in the same positions will need to be retrained at least as often to keep abreast of changing technology. Furthermore, evidence suggests that many employers would prefer that colleges concentrate on general education and, if a choice has to be made in the matter, leave the specific job-training skills to those who do the hiring. For example, Dr. Curtis W. Tarr, testifying on the quality of education, recently explained that employers do not look to the schools to "provide accomplished machine operators. Most of

the machine tools in our factories," he continued, "are too specialized to expect our schools to do that training. We look to the schools to concentrate on the basic subjects . . . . We rely upon general preparation, not preparation for a specific job." Tarr added that large manufacturers would prefer more rigorous academic discipline in schools," and added that if that happened job applicants "would then know better how to work, and also would have improved skills in reasoning, calculating, and expression."[4]

Former Secretary of Commerce, Juanita Kreps, speaking at a college convocation recently, asked rhetorically: "What education best prepares you for . . . a career? It will come as no surprise," she asserted, "that your liberal arts background is the best possible beginning." Jobs of the future, she continued, will require skills learned in the liberal arts: "Language will assume greater importance, along with much more emphasis on the history of the cultures of the world's people." Without such education, she concluded, "We shall be unable to compete with those nations long accustomed to providing the necessary knowledge and skills."[5]

Given these conditions, it would seem that the best way to prepare a student for success in the uncertain world of work in the future is to provide him with an excellent foundation in the intellectual skills taught in

the liberal arts. And, perhaps surprisingly, this is exactly what research indicates employers would prefer.

III. The Case for the Humanities--The Infrastructure of a College Education

Aristotle defined liberal arts as the education suited for free men. In addition to being workers, Americans are also free people, and living in a free society requires a certain degree of familiarity with our cultural heritage, especially with democratic processes and the rule of law. Jefferson admonished that to "expect any nation to be free and ignorant, in a state of civilization, is to expect what never was and never will be."

Education is certainly more than job-preparation; it is preparation for life. And life includes such things as citizenship responsibilities, the enjoyment of leisure, and the pursuit of knowledge to satisfy man's basic need to learn. It also includes the cultivation of social and intellectual skills and the development of values and tastes. Howard Bowen recently wrote, "I believe . . . that the higher educational community is obligated to its students of all ages to help them become broadly educated men and women and not merely cogs in the vocational machinery of a complex industrial society."[6] The secretary and electrician have citizenship

rights equal to those of an attorney or an M.D., and certainly have the same right to appreciate art, literature, and music. All have an absolute need to communicate clearly and to relate effectively with their fellow human beings. These are the skills which supersede and transcend job skills of a technical nature, and they are the skills normally taught in the social sciences and the humanities.

However, perhaps the most compelling argument in favor of a general education core in every technical curriculum is that employers value the skills taught in these subjects above skills normally taught in technical courses.

In a recent survey conducted at West Virginia Northern Community College,[7] a select group of major employers of the Upper Ohio Valley were asked what percent of a two-year technical curriculum should consist of general education, and to list in priority order the competencies desired in mid-level managers and technical workers. Almost all participants said two-year technical programs should have more than the present 25 to 33 percent of general education courses, while half said the general education component should be at least 50 percent. Competencies were prioritized in the following order:

FACTUAL COMMUNICATION SKILLS
COGNITIVE SKILLS
INQUIRY SKILLS
BLANK CARD (ETHICS/HUMAN RELATIONS/INTERPERSONAL SKILLS)
ARITHMETIC SKILLS
COMMUNICATION SKILLS

CRITICAL READING SKILLS
TECHNICAL WRITING SKILLS
SELF-DIRECTED LEARNING SKILLS
AFFECTIVE SKILLS
COMPUTATIONAL SKILLS
PERSONAL AND/OR BUSINESS WRITING SKILLS
TECHNOLOGICAL AWARENESS
LITERAL READING SKILLS
INFORMATION LOCATING SKILLS
ECONOMIC AWARENESS
PUBLIC ADDRESS SKILLS
SCIENTIFIC SKILLS
FISCAL AWARENESS
FORMAL RESEARCH SKILLS
CITIZENSHIP AWARENESS
GOVERNMENT STRUCTURE AWARENESS
FIGURATIVE READING SKILLS
GEOGRAPHICAL AWARENESS
AMERICAN HISTORY AWARENESS
CULTURAL BACKGROUND AWARENESS
LITERATURE SKILLS
HISTORIC AWARENESS

From these responses it is clear that the skills taught in general education, and especially in the humanities, are skills considered most useful by those who employ the majority of our students.

Further research indicates that the most successful executives in business and industry have liberal arts rather than technical degrees.[8] In addition, more people lose their jobs as a result of the inability to communicate clearly and relate effectively to other people than lose their jobs because of lack of technical proficiency.

Humanities and social science courses are valuable then, and are, in fact, the infrastructure of a college education.

In summary, the liberal arts, and especially the humanities, are the heart and core of a college education; they should be an integral part of every technical program. The American Association of Community and Junior Colleges' (AACJC's) concept statement on the humanities emphasizes that: "The one thing all community and two-year colleges should have in common . . . is their commitment to education in the liberal arts, of which the humanities are at the center."[9] The National Commission on Education has urged that: "Knowledge of the humanities . . . must be harnessed to science and technology if the latter are to remain creative and humane."[10] Eric Ashby, the prominent British educator, asserts pointedly that "An undergraduate course in technology which does not include a serious element of humanities and social sciences is simply not meeting the needs of society."[11]

As Dr. Frank H.T. Rhodes, President of Cornell University, recently stated: "The ultimate business of education is the cultivation of the human mind and the nurture of the human heart. That is our awesome responsibility."[12]

This is why we must keep the humanities in the community college curriculum; this is why we must find the proper synthesis and balance--Aristotle's "Golden Mean."

Thank you for listening, and I wish you the best of luck.

FOOTNOTES

[1]Henry Ebel and Morton Margules, "Status in Higher Education: The Pyramid Is Inverted," The Chronicle of Higher Education, April 6, 1981, p. 64.

[2]James W. Botkin, Mahdi Elmandjra, and Mircea Malitza, No Limits to Learning, Pergamon Press, 1979, p. 27.

[3]"Employer Tax Incentives for Remedial Education?," National Report for Training and Development, IX, No. 7, 1983.

[4]"ASTD Testifies on Quality of Education," National Report for Training and Development, IX, No. 13, 1983.

[5]"Liberal Arts in the Market Place," Convocation address presented at St. Olaf College, Winter 1983.

[6]"Some Reflections on the Present Condition and Future Outlook for American Higher Education," Academe, February 1980, p. 13.

[7]Rita Meyer, Desired General Education Competencies: A Corporate Perspective, doctoral dissertation, West Virginia University, 1983, p. 77

[8]Prepared for the U.S. Senate Select Committee on Equal Education Opportunities by Walter F. Mondale, 1981, as cited in "The Challenges Facing American Education," Academe, September-October 1982, p. 12.

[9]Community and Junior College Journal, February 1983, p. 40.

[10]National Commission on Excellence in Education, "A Nation at Risk," April 1983.

[11]Adapting Universities for Technological Society, Jossey-Bass, 1974, p. 42.

[12]As cited in "A National Overview of the Role of the Community College in the Development of High Technology with Specific Emphasis on the North Carolina Experience (Model)," presented by Ben E. Fountain, Jr., President, Isothermal Community College, at West Virginia Community College Association Conference, Harpers Ferry, West Virginia, October 1983.

ERIC Clearinghouse for Junior Colleges
AUG 8 1985